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Sustainable Commodities Investing

Executive Summary

Investors seeking to incorporate sustainability considerations into their commodities portfolios may have a variety of ESG objectives. In many ways, assessing which commodities are sustainable is the easy part. Reasonable approaches often take a cradle-to-grave perspective that considers both production and utilization. The more difficult part is identifying what investment action in commodities will achieve an ESG goal. Objectives seeking to avoid association with less sustainable commodities clearly call for a no-touch investment policy. The same is true for seeking to avoid influencing prices of “sensitive” commodities (e.g., food-related

ones), or giving the appearance of such price influence. In contrast, few if any investment approaches in commodities effectively, let alone coherently, align with the ESG goal of somehow changing commodities supply and demand in the name of sustainability. At the very least, most commodities investment approaches that come close actually raise more questions than they answer. However, all is not lost with such a goal. The corresponding investor may be better able to tackle this objective in corporate securities markets, by seeking to influence the cost of capital of specific, corporate commodities producers and consumers.

Michele Aghassi
Principal

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Introduction

Sustainable investors have, in the past 5-10 years, settled into traditional equity and corporate bond solutions that address their needs. For both asset classes, associated regulation as well as concerns and priorities continue to evolve. The variety of relevant data is ever growing. And of course, innovation will always continue. Nonetheless, good solutions can be adapted as necessary. These approaches and the needs that catalyze them are hardly homogenous, but, in the case of equities and corporate bonds, there is less debate than there was a decade ago around how to address sustainability in a portfolio.

With their corporate sustainable investment solutions in place, some ESG-driven investors are seeking approaches to other asset classes. It's easy for asset managers to (perhaps self-interestedly) propose solutions, but which, if any, solutions coherently align with the underlying sustainability motivations of the investor? In asset classes beyond equities, these questions can become much more

complicated for a variety of reasons, and perhaps especially complicated in the case of commodities.

Commodities investing has increased markedly over the last couple decades. The long-term premia potential of the broad asset class contributes to the appeal. The underlying intuition at least partly stems from commodity producers' hedging activity. These producers tend to have concentrated businesses focused on one or a small number of commodities, and hence often sell corresponding futures to hedge risk. Investors who take "the other side" via long futures positions are thus generally compensated for "risk sharing." In addition, the asset class is appealing due to its diversification of equity and bond markets and its potential for inflation protection. Lastly, active investment in commodities, whether long-only or long-short, may offer the possibility of additional alpha on top of any premia associated with the asset class itself.¹

The "*Easier*" Question: Which Commodities Are Sustainable?

Discussions of sustainable commodities investing have been less common than for corporate securities. Until recently, these discussions tended to focus on *how* to determine the sustainability of different commodities, rather than *what* to do with that information. As with any ESG assessment, there is a range of plausible answers, driven

by differing priorities between, for instance, environmental considerations and non-environmental societal implications. Despite this unavoidable subjectivity, reasonable frameworks have emerged.² Generally, these frameworks take a cradle-to-grave perspective, attempting to measure the good and harm caused all the way from the production of a

1 See Ooi et al (2022) for further discussion.

2 For example, rfu Research (2022).

commodity to its consumption, including end-of-life disposal of relevant final-goods products, as appropriate.

Consider lithium and nickel,³ important raw materials required to construct electric vehicle (EV) batteries, central to the clean energy revolution. Production of these metals have a variety of negative environmental and social consequences. Mining, extraction, and refinement consume energy and generate emissions. Various parts of this supply chain may also be associated with questionable working conditions and water pollution, which in turn may threaten human health in local communities as well as the biodiversity of local aquatic life. In book-end fashion, retiring EV batteries is likewise rife with parallel sustainability challenges. In landfills, EV batteries pose fire hazards and the potential for harmful chemicals seeping into local soil and water. Battery recycling programs

offer the opportunity to reuse some of the valuable metal contents, but doing so in a sustainable way is easier said than done. Recycling generally involves pyrometallurgical or hydrometallurgical processes, i.e., using either heat or aqueous chemical approaches to extract certain materials. Unfortunately, these processes are also polluting to air and water. The countries most involved in battery recycling tend to be the ones with weakest environmental, labor, and human rights laws, raising further questions.⁴ On the other hand, electric vehicles, and thereby lithium and nickel, offer a means of reducing transportation-related emissions and the effects of carbon pollution on human health and wildlife. With these benefits in mind, directionally, lithium and nickel should receive a better all-in sustainability rating than a metal like lead that has a less green utilization profile.

The *More Difficult* Question: What to Do About It?

In many ways, the question “How sustainable is a given commodity?” is the easy part. Even if the question had a unique, objective answer, how to apply that information to commodities investing is the trickier part, far trickier than for equities and corporate bonds. We first discussed with investors five years ago these challenging commodities questions. Today, investors seem to be giving the topic more serious consideration. Viewpoints on these issues can be found in UBS (2022), Hoyle and Moore (2023), Janardanan et al. (2024), and Popatlal et al. (2024). Despite not being the first to write on the topic in

the public domain, in this piece, we share an unvarnished and differentiated perspective on which commodities investing approaches are effectively or even coherently aligned with different ESG motivations.

Before we address how an ESG-motivated commodities investor should approach sustainability, let’s clarify the type of investing we are discussing. We are focused on investors who are not themselves producers or direct consumers of a commodity. Some may be speculators seeking to profit by actively trading, while others may seek to earn a

3 Within the last few years, UBS has developed a sustainable version of their Constant Maturity Commodity Index (CMCI) using rfu sustainability data. Our nickel example is based on their nickel case study of rfu’s sustainability rating methodology.

4 Ornes (2024).

risk premium from passive exposure to commodities as an asset class. Either way, few of these non-producer, non-consumer investors transact directly in commodities spot markets. Some gain desired exposures via other asset classes like stocks or bonds of commodity-related companies.⁵ Many transact in commodities derivatives instruments. In this piece, we'll focus entirely on commodities futures investment, and for brevity's sake, "commodities" will refer to positions held via futures. The points and conclusions are also applicable to commodity forwards and swaps on commodity futures.

So, how should a sustainable investor approach different commodities in a portfolio? As mentioned, this question is challenging. The more obvious reason why it's tricky - we'll get to the less obvious one next - is that different investors may have quite different ESG motivations and objectives. The most common ones are the following:

1. **"No profit by association:"** Some investors don't want to profit from any association with a commodity they deem to be "bad."
2. **"No influencing prices:"** Some investors don't want to be seen as influencing the prices of certain commodities, e.g., those associated with food needed to sustain human life.
3. **"Make the world a better place:"** Others may seek to change the world for the perceived better by acting to reduce (increase) the production and utilization of a "bad" ("good") commodity.

While this list may seem short, it is fairly complete. Other motivations tend to be variations on those described above. For

instance, allowing profit from investment activity only if it makes the world a better place is a variation on Motivation 3. As another example, hypothetically, investment activity designed to comply with regulation stemming from Motivation 2 is itself driven by Motivation 2.

Motivations 1 and 2 are the most straightforward to address through commodities portfolio action, in that there is a clear investment approach that achieves these goals. Namely, both are logically consistent only with no-touch policies, no-touch for "bad" commodities in the case of Motivation 1, and no-touch in the case of commodities whose prices shouldn't be "influenced" in the case of Motivation 2. After all, any long or short positions in such commodities risk either profit or price impact, or both.

That brings us to Motivation 3, seeking to "make the world a better place." This case is by far the most challenging to address through investment in commodities themselves, as opposed to investment in the corporations that produce and consume them (more on that later). The reasons for these challenges are the economics of commodity supply and demand, including price inelasticity, the perception that commodities markets sometimes signal broader information about the macroeconomy, and the nature of hedging activity. As Cheng and Xiong (2014) explain, there are three mechanisms linking the futures market in a commodity with the corresponding spot market: storage, information discovery, and risk sharing. We will examine each in turn to determine what, if any, commodities investing approaches could be consistent with Motivation 3. We summarize our conclusions in **Table 1**, with a more detailed discussion in the sections that follow.

⁵ Commodity-related equities or bonds can be a poor proxy for exposure to the underlying commodity as their beta to the equity or bond market can dominate returns.

Table 1. Which Mechanisms Linking Commodity Futures and Spot Markets May Allow Sustainability-Driven Impact?

Mechanism	How is it relevant?	Difficulties achieving Motivation 3 impact via commodities investing
Storage and inventories	Price pressure in the futures market may influence a commodity's inventories and the cost of storage in a way that ultimately creates spillover price pressure in the spot market.	<ul style="list-style-type: none"> Supply and demand can be inelastic, esp. in the short run. The investment horizon may be too short for price pressure to have impact. Price moves have opposing effects on the quantities demanded and supplied (with or without curve shifts), except in the case of carbon allowances whose supply is fixed.
Information discovery	Investors may regard commodities prices as signaling information about the broader economy.	<ul style="list-style-type: none"> Under the information discovery mechanism, price increases in "bad" ESG commodities might signal macroeconomic growth and further stimulate demand for such commodities.
Risk sharing	By facilitating price certainty, futures market participants share price risk and thereby support commodity production and consumption.	<ul style="list-style-type: none"> The need for risk sharing is often asymmetric. Commodity producers generally seek risk sharing more than do consumers. I.e., there's often more need for others to take the long side of commodities futures. The asymmetry in demand for futures long and short positions may fluctuate. Commodity futures investors often base their investments on more than an altruistic desire to help share risk. Motivations like trend-following may point investors toward exacerbating rather than alleviating an imbalance in risk sharing.

The Theory of Storage: Price Pressure and Inventories

Let's start with the theory of storage, which basically says that if the futures price of a storable commodity becomes too expensive relative to the spot price, then the spot price may rise as well, in the absence of sufficient increases in inventories and/or the cost of inventory. To understand the intuition of this relationship, consider that, if the cost of inventory remains too low, an arbitrageur able to store the commodity could buy spot, store the commodity at a cost, and lock in a profit by selling futures at the much higher futures price. This trade could continue until inventories, the

cost of storage, and the spot price increased enough to make it no longer profitable. For a more detailed discussion of this relationship, see Cheng and Xiong (2014) or Knittel and Pindyck (2016).

So, the theory of storage suggests that additional buying in futures, *if* it leads to an increase in the futures price, could conceivably spill over to an increase in the corresponding spot price.^{6,7} As an important aside, one can't take for granted that additional buying in futures will have any impact on even

6 We'll focus on the perspective an investor buying futures, (misguidedly) hoping to simultaneously decrease the supply and demand of a "bad" commodity. The analogous conclusions follow if one considers instead an investor selling futures, hoping to simultaneously increase the supply and demand of a "good" commodity.

7 For what it's worth, a number of academic papers find little evidence that futures prices predict subsequent spot prices. See Cheng and Xiong (2014) for references. These findings perhaps further question price pressure as a viable means of sustainable impact via investing in commodities futures markets.

the futures price. For example, index-fund long positions in commodity futures grew explosively over the last 20 years, and yet academics disagree on whether this growth had any price impact. Many, including Hamilton and Wu (2015) concluded it did not. However, let's assume for the sake of argument that additional futures buying *can* move futures prices and *could* spill over into the spot price. Would this be a win for an investor driven by Motivation 3, hoping to curtail both supply and demand of a “bad” commodity? In the absence of supply and demand curve shifts, success with this goal would prove elusive. Remember that we're focused on investing in commodity derivatives, rather than in the spot market. As noted in Knittel and Pindyck (2016), it's rare for commodity futures contracts to result in physical delivery, as those holding such positions generally close out or roll over the contracts before the delivery date. Accordingly, buying and selling commodities futures does not, in and of itself, *directly* shift demand or supply curves.⁸

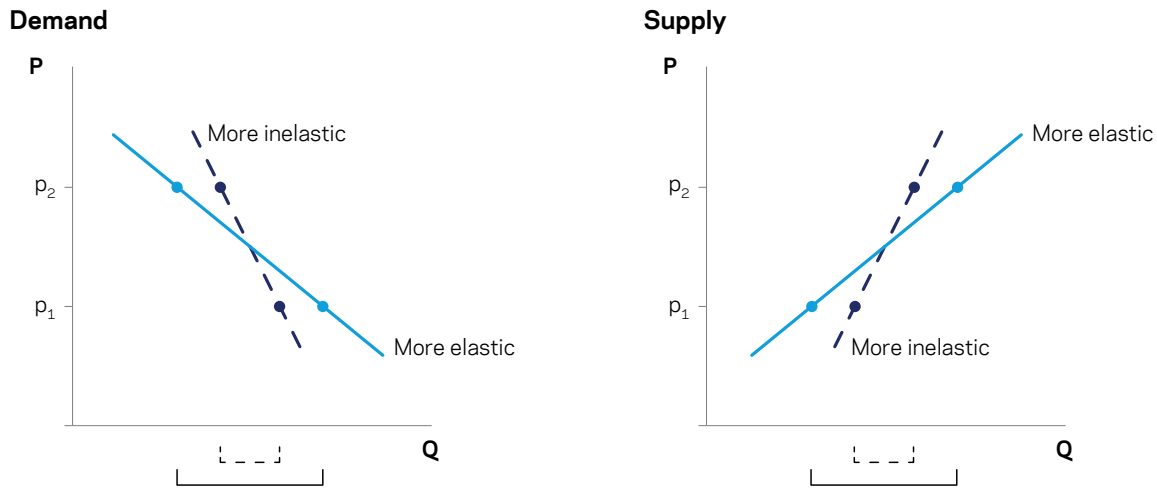
In the absence of supply and demand curve shifts, price changes alone may yield outcomes that are either ineffective or misaligned with Motivation 3, for a variety of reasons. First, “inelasticity” of supply and demand may limit the extent of these quantity changes, particularly over the short run. The responsiveness of quantity, either demanded or supplied, to price can vary greatly from one commodity to another, from one time horizon to another, and even between supply and demand for the same commodity and time horizon. Economists refer to this responsiveness as “price elasticity” of supply and demand.

When supply or demand are relatively inelastic to price changes, the supply and demand curves are more steeply sloped (price is usually plotted on the vertical axis and quantity on the horizontal one), resulting in a less responsive relationship between price and quantity. Consider crude oil, for example. To state the obvious, individuals need transportation to travel from their homes to their jobs. In some geographies, public transportation isn't readily available, and EV charging station infrastructure may not yet adequately exist. Regardless, most consumers will lack the economic means to switch overnight from the internal combustion engine vehicles they already possess to any newer car, let alone a potentially more expensive EV. Likewise, production increases may require time-consuming capital expenditure, and may thereby not be feasible over the short run.

Figure 1 below illustrates price inelasticity of demand and supply. The figure's dashed lines represent the more inelastic demand and supply curves. The more inelastic demand or supply is, the more a given change in price will correspond to a smaller change in the quantity demanded or supplied. Over the short run, many commodities have relatively inelastic supply and demand that may become somewhat more elastic over longer horizons. See Bogmans et al. (2024) for a detailed discussion as well as interesting empirics. As these authors note, precise and accurate estimation of commodities' elasticities is quite challenging. Inelasticity may prevent quantities from budging much in the short run. And the investment horizon of many commodities investors, e.g., trend-following investors,⁹ may preclude impact via price pressure over longer horizons.

⁸ Commodity futures trading may *indirectly* contribute to such shifts, or simply reflect expectations of such shifts. We'll cover this possibility in the section on information discovery.

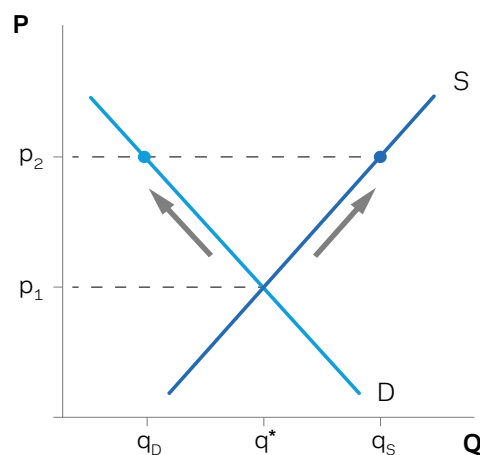
⁹ See the section on “Risk Sharing and the Cost of Hedging,” where we discuss trend-following strategies further.

Figure 1: Elastic vs. Inelastic Supply and Demand Curves

Source: AQR. For illustrative purposes only.

Second, and more problematically, without supply and demand curve shifts, price changes will be associated with opposite—sign changes in the quantities supplied and demanded. Specifically, higher spot prices that might result from additional buying¹⁰ in the futures market would yield a disequilibrium, with an excess supply in the spot market. In other words, the quantity supplied would increase

(in **Figure 2** below, from q^* to q_s), the quantity demanded would decrease (in **Figure 2**, from q^* to q_D , which is strictly less than q_s), and hence the aforementioned increase in inventory. This outcome doesn't align with the original goal, because the desired dampening of demand for the “bad” commodity comes with the undesirable companion effect of higher production.

Figure 2: Price Increase Without Curve Shifts

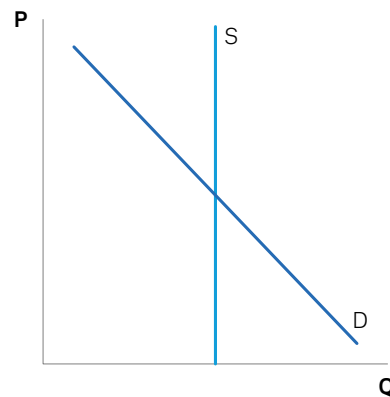
Source: AQR. For illustrative purposes only.

¹⁰ For brevity's sake, we focused here on sustainable investors buying futures, but conversely analogous conclusions would apply for selling.

These opposing price pressure impacts on supply and demand stand in contrast to the parallel, but less complex, mechanism of the cost of capital in corporate securities markets. Price increases (decreases) in a company's stocks and bonds will tend to lower (raise) that company's cost of capital, thereby potentially encouraging the company to do more or less of a particular activity. See Jones et al. (2023) and the references therein for a discussion. In commodities markets, price pressure impacts the price of the good, rather than a single company's cost of financing, thus yielding opposing implications on quantities supplied and demanded.

Under fairly unique conditions, the dynamics described above are different in a way that avoids the unwanted side effects. Consider a commodity having perfectly inelastic either supply or demand, but not both. There are few examples of such commodities, but carbon allowances are one. Additional buying of futures on these allowances would push up the spot price of the allowances themselves. As shown in **Figure 3**, these price pressures wouldn't impact the supply, set by the relevant government. However, the upward price pressure would make it more expensive to emit in these markets and might even cause fewer allowances to be purchased. Accordingly, a sustainable investor could align with Motivation 3 via a long-only constraint on carbon allowance futures.

Figure 3: Carbon Allowances with Perfectly Inelastic Supply



Source: AQR. For illustrative purposes only.

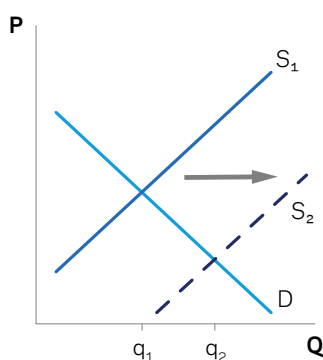
Couldn't price pressure from sustainable investors lead to supply and demand curve shifts? These curve shifts are far easier for governments or consumers to effect. For example, a government might give tax breaks or otherwise incentivize the producers of a "good" commodity to produce more at a given price, thereby pushing the supply curve for that commodity to the right, as shown in **Figure 4(a)**.¹¹ A government might tax or otherwise disincentivize consumers of a "bad" commodity from consuming as much as they normally would at a given price, thereby

pushing the demand curve to the left, as shown in **Figure 4(b)**, or conversely for consumption of a "good" commodity. Likewise, sustainability-minded consumers might actively elect to pay a premium to consume more of an ESG-aligned commodity than its less aligned substitutes. As an example, some consumers elect for the more expensive "green energy option" on their utility bills. This type of behavior pushes aggregate demand curves for relevant green commodities rightward, as shown in **Figure 4(c)**.

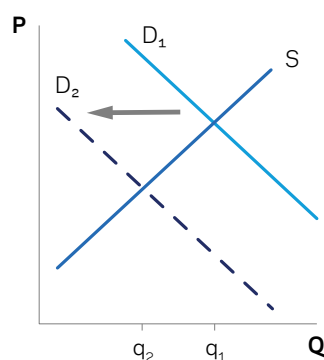
¹¹ Conversely, a government may penalize, via taxes or other means, the production of a "bad"-ESG commodity.

Figure 4: Curve Shifts

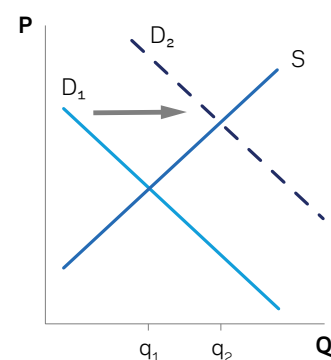
(a) Supply shifts rightward



(b) Demand shifts leftward



(c) Demand shifts rightward



Source: AQR. For illustrative purposes only.

If an investor could exert persistent upward price pressure on a “bad” commodity, over the long run, it might shift the demand curve leftward.¹² In this instance, the very expensive poor—ESG commodity would be less attractive than its cheaper good—ESG substitutes, which might become easier to source through competitive forces that are allowed to play out over time. However, sustained price pressure could also shift the supply curve right. While a higher price may drive away some demand, it may make production of the commodity more profitable, thereby encouraging higher supply. Increased production may require

capital expenditure by producers and may likewise require time to play out. Regardless, most commodities investors have investment horizons too short for such outcomes. And even those with long investment horizons may not achieve price pressure in the futures market at all, as discussed in Hamilton and Wu (2015).

The question of whether futures trading can more easily *indirectly* lead to supply and demand curve shifts brings us to the mechanism of information discovery.

Information Discovery

So far, we have not identified a sustainable investment approach to commodities that is aligned with Motivation 3. Does thinking about the commodities futures market as a means of information discovery help identify one? No! In fact, it complicates this quest! Cheng and Xiong (2014) discuss that the centralized and standardized nature of futures

contracts gives them an important role in aggregating information across decentralized and non-standardized spot markets. As a result, changes observed in commodity futures prices may actually signal to different market participants future expectations related to the broader macroeconomy. For example, a rise in the futures price of a given commodity

¹² Again, for brevity's sake, we're only addressing upward price pressure on a “bad” commodity. All the analogous conclusions hold for downward price pressure on a “good” commodity. We're also giving “full benefit of the doubt” that price changes spillover from futures to spot market

could signal an expectation of increased global economic growth. Consumers and producers of commodities may be unable to distinguish between price moves based on information discovery versus those driven purely by speculation. However, they may sometimes act on these moves as if reflective of information discovery, regardless of whether the “information” that has been “discovered” proves prescient.

For example, consider commodity consumers who use a commodity to produce a final good. These consumers may interpret the upward price move on the commodity futures as a positive signal about future economic growth, and thereby come to expect more demand for their final good. In response, in order to seize the opportunity for more final-good sales,

they may consume more of the commodity, shifting its demand curve right, like in **Figure 4(c)**. See Cheng and Xiong (2014) for a further discussion.¹³ For a sustainable investor looking to somehow limit “bad” commodities, pushing up the futures price of a “bad” commodity could thus backfire by actually causing more of it to be consumed! But, pushing the price down might, in the absence of an interpretation of information discovery, and as discussed in the last section, also cause more of it to be consumed, because it is cheaper. The latter case involves a move along a fixed demand curve, rather than a shift in demand curve. Bottom line, as with the theory of storage, the information discovery perspective yields no coherent commodities investment strategy for achieving Motivation 3.

Risk Sharing and the Cost of Hedging

The final mechanism linking the commodity futures and spot markets is risk sharing. Let’s examine whether this mechanism can suggest a logical approach for a sustainable investor looking to “make the world a better place,” as in Motivation 3.

As mentioned earlier, producers, and to a lesser extent consumers, of commodities may wish to mitigate the risk of disadvantageous price moves. They may look to futures contracts as a means of ensuring some degree of price certainty, i.e., a means of finding other participants who can share this risk. Without the potential for risk-sharing, a

commodity may be less attractive to produce or consume. Some therefore suggest that merely participating in futures markets increases risk sharing and thereby facilitates production and consumption of that commodity.¹⁴ Hoyle and Moore (2023) and Janardanan et al. (2024) make such an argument. In other words, they suggest that sustainable investors may be able to achieve Motivation 3 simply by participating in commodity futures markets. More specifically, a sustainable investor would want to participate more for “good”-ESG commodities and less for “bad” ones. On the surface, this idea is intriguing. Does it hold up to scrutiny?

13 For example, Cheng and Xiong (2014) note that “key commodities such as crude oil, copper, and soybeans have been widely used as barometers of the global economy in recent years.” They furthermore note that “Due to the informational role of commodity prices, demand may increase with price. This is because a higher commodity price signals a stronger global economy and motivates each goods producer to demand more of the commodity for producing more goods. This informational effect offsets the cost effect.”

14 The risk sharing (i.e., cost of hedging) perspective most closely echoes the cost of capital perspective often taken with corporate securities, as in, for example Jones et al. (2023) and Eskildsen et al. (2024). However, the implications in the context of commodities are far more complex

If consumers and producers of commodities hedged equally in the futures market, this risk sharing argument would be irrelevant. All the risk would already be shared. Janardanan et al. (2024) note that such balance does not exist. Rather, producers seek to hedge (via short futures positions) far more than consumers do (via long ones). This imbalance may stem somewhat from the fact that some commodity consumers produce final goods whose higher costs may partly be passed through to downstream customers. So, for a long-only commodities investor, there is some merit to thinking that a valid implementation of Motivation 3 would be to go more long ESG—“good” commodities and less long ESG—“bad” ones, as Janardanan et al. (2024) propose. It should be mentioned that this proposal does not come without undesirable potential side effects. Namely, as discussed in the section on the theory of storage, less willingness to take the long side could push prices down and quantity of the commodity demanded up. And more willingness to be long in “good” ones could have the opposite effect.

Van Hemert et al (2024)¹⁵ seek to take this risk-sharing argument a step further and apply it to long-short commodity futures investing. They propose that a long-short sustainable investor may be able to achieve Motivation 3 by taking larger magnitude positions, whether long or short, in ESG-“good” commodities and by not taking any positions in ESG-“bad” commodities. As they frame it, this approach would be equivalent to risk sharing more in “good” commodities and risk sharing less in “bad” ones. This argument too is intriguing. However, it seems to ignore the inherent imbalance often already present in risk sharing. If hedging is sought more by

producers than consumers, the net need for risk sharing is generally a need for investors to take long positions. Would it fix the proposal to make it a no-touch for “bad” commodities and long-only for “good” ones? Considered over the long run, maybe. But, in the presence of more information on what drives the desired long and short positions in the first place, probably not.

As a concrete example, consider the specific case of trend-following investing. Trend-following investors position themselves to take advantage of the continuation of trends. For example, the most basic trend-following strategies seek to profit from trends in prices - i.e., that assets with recently positive (negative) returns will remain winners (losers) near term. Hurst et al. (2017) provides a nice overview. As described in Brooks et al. (2023), more sophisticated trend-following investors may consider economic trends as well - i.e., may seek to profit from continuation in macroeconomic trends, including those relating to growth and inflation, among other data. Trend-following investors aren’t focused on risk sharing and certainly don’t take long and short positions at arbitrary times and under arbitrary circumstances. A futures market participant is contributing to risk sharing only if there aren’t already enough market participants available to share the risk. Do trend-based positions plug such a gap and thereby contribute to risk sharing? It would seem the opposite may often be true.

For instance, a positive futures price trend would tend to reflect there having recently been more long than short demand.¹⁶ And continuation of this price trend would likely reflect that imbalance continuing. Unlike a contrarian investor, a trend-following investor

15 The transcript of Van Hemert et al’s (2024) podcast can be found at the Man Institute website, <https://www.man.com/maninstitute/long-story-short-sustainability-systematic-investing>.

16 Obviously, any actual futures positions have both a long and a short side. We are not talking about an imbalance in the number of long and short positions, but in the demand for these positions. The other side can always be coaxed into existence for the right price.

would likely widen rather than alleviate this imbalance. Even so, one might argue that an increase in the imbalance in this example, i.e., providing additional long demand, would at least further reduce the cost of hedging for commodity producers. However, as this imbalance in willing participants grows, the potential side effects, i.e., potentially conflicting forces stemming from price pressures, might dominate any benefits of lower hedging costs. If speculators themselves can swing the imbalance between short and long demand in either direction at any time, it further complicates the coherence of the ESG approaches proposed in the name of risk sharing. Consequently, even long-only investors acting on proposals like Janardanan et al.'s, described above, may not always be “on the right side” for risk sharing with producers and consumers.

Conclusion

The specific motivations of a commodities investor's sustainability concerns should drive how to incorporate sustainability into a commodities portfolio. The goals of “no profit by association” (Motivation 1) and “no influencing prices” (Motivation 2) clearly and logically correspond to no-touch constraints on certain commodities. In contrast, “make the world a better place” (Motivation 3) generally lacks a sustainable commodities investment approach that coherently ties back to this impact-driven goal. We examined three mechanisms linking futures and spot markets in the hopes of identifying such a commodities investment approach, but generally couldn't, except in the case of carbon allowance futures. However, such investors must remember that direct investment in commodities is not their only potential avenue of impact. They may

Bottom line, any commodities investment approaches seeking to fulfill Motivation 3 raise at least as many questions as answers. And this complexity is especially true for commodities trend-following investors. For Motivation 3, suggestions based on risk sharing may seem like the most promising alignment of action with objectives. However, these suggestions' success may lie less with impact than with making sustainable investors feel better about their actions. That said, these investors may still be able to seek change by influencing corporates' cost of capital through their corporate securities investment. In other words, corporate securities markets may be the best asset classes for investors to achieve Motivation 3.

be better positioned to succeed in the goals of Motivation 3 by modifying their investment behavior in corporate securities, where they may be able to influence the cost of capital of individual companies associated with specific commodities. Table 2 summarizes the commodities investment approaches consistent with different sustainability motivations.

As with any non-financial investing objective, of which Motivations 1, 2, and 3 are all examples, incorporating these sustainability goals may require tradeoffs between returns and ESG needs. The goals discussed herein require not only an approach for judging commodities through an ESG lens, but also the definition of a threshold. What commodities are too “bad” to touch

or too “sensitive” to allow for prices to be influenced by derivatives investors? How much performance potential may be sacrificed by no-touching or otherwise constraining exposure to a particular commodity? An investor hoping to achieve sustainability

objectives will want to partner with an investment manager who can adeptly assess and communicate the tradeoffs involved, so that such decisions can be informed and effective.

Table 2. Mapping Commodities-Related Sustainability Motivations to Consistent Investment Action

Motivation	How best to achieve this goal
<p>1. “No profit by association:” Don’t profit from any association with an ESG—“bad” commodity.</p>	<p>No touch policy on “bad” commodities.</p>
<p>2. “No influencing prices:” Don’t affect prices of ESG-“sensitive” commodities (e.g., food related).</p>	<p>No touch policy on “sensitive” commodities.</p>
<p>3. “Make the world a better place:” Reduce (increase) the production and utilization of a “bad” (“good”) commodity.</p>	<p>Long-only policy on carbon emissions futures. For other commodities, it is difficult to achieve this goal through direct investment in commodities futures and related instruments. Instead, focus on investment action in corporate securities markets, seeking to influence the cost of capital of individual companies. Specifically, buy (sell or even short) equities and bonds of corporate producers / consumers of “good” (“bad”) commodities.</p>

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